

Sub B1

What is claimed is:

2

A bubble cycling heat exchanger, wherein a closed fluid loop is in contact with a heat absorbing source through a heat conducting block; the loop has a bubble generator, an expanding area for generating bubbles is installed at loop; the loop is also formed with a guide region from which bubbles ²⁴ ~~is~~ easily separable and a radiator; a heat conducting block of the closed loop is connected to a heat absorbing source; since ~~(the overheat)~~ of the heat absorbing source will cause the loop to generate bubble; by an unequilibrium formed at the guide region of the loop, the bubbles will separate from the heat absorbing source so that ~~(the liquid)~~ in the loop flows for transferring heat so that heat is radiated by ~~(the fins)~~ or other elements of the radiator from ~~(the primary element)~~ of a computer at the heat absorbing source, the loop operates continuously until a heat equilibrium is achieved.

Sub B2

2. The bubble cycling heat exchanger as claimed in claim 1, wherein the primary element of the computer at the heat absorbing source is a central processing unit.

3. The bubble cycling heat exchanger as claimed in claim 2, wherein the loop at the heat conducting block on the central processing unit is installed with at least one ¹¹²⁽²⁾ fin.

4. The bubble cycling heat exchanger as claimed in claim 3, wherein a plurality of loops connected in parallel are installed.

5. The bubble cycling heat exchanger as claimed in claim 3, wherein one side of ~~(the fin set)~~ is connected to a blower.

6. The bubble cycling heat exchanger as claimed in claim 3, wherein a

5.7.14

blower is connected above the top surface of the fin set.

7. The bubble cycling heat exchanger as claimed in claim 3, wherein a
F8/15 blower is connected below the top surface of the fin set.

8. The bubble cycling heat exchanger as claimed in claim 1, wherein the
5 bubble generator is a spiral wire embedded in the loop.

9. The bubble cycling heat exchanger as claimed in claim 1, wherein a
bubble generator is installed within the heat conducting block.

10. The bubble cycling heat exchanger as claimed in claim 1, wherein a
W guide region is installed in the heat conducting block.

11. The bubble cycling heat exchanger as claimed in claim 1, wherein at
least one loop is installed in the heat conducting block.

12. The bubble cycling heat exchanger as claimed in claim 11, wherein
the loops in the heat conducting block are arranged at (the left and
right sides)

13. The bubble cycling heat exchanger as claimed in claim 11, wherein
the loops in the heat conducting block are arranged at the upper and
lower sides.

14. The bubble cycling heat exchanger as claimed in claim 1, wherein at
least one loop is formed.

20 15. The bubble cycling heat exchanger as claimed in claim 14, wherein
the loops are symmetric at the left and right sides.

16. The bubble cycling heat exchanger as claimed in claim 14, wherein
the loops are arranged at left and right sides, alternatively.

17. The bubble cycling heat exchanger as claimed in claim 14, wherein
25 a multiple layers of loops arranged at longitudinal direction is

installed.

18. The bubble cycling heat exchanger as claimed in claim 1, wherein
the computer is a notebook computer.

5 19. The bubble cycling heat exchanger as claimed in claim 18, wherein
a wind channel is installed at a side of a case of the notebook
computer.

20. The bubble cycling heat exchanger as claimed in claim 19, wherein
a blower is installed at the wind channel.

21. The bubble cycling heat exchanger as claimed in claim 20, wherein
the blower is at the wind inlet of the wind channel.

22. The bubble cycling heat exchanger as claimed in claim 20, wherein
the blower is at the wind outlet of the wind channel.

23. The bubble cycling heat exchanger as claimed in claim 19, wherein
the wind inlet of the wind channel is at a bottom of the case.

24. The bubble cycling heat exchanger as claimed in claim 19, wherein
the wind inlet of the wind channel is at a lateral surface of the case.

25. The bubble cycling heat exchanger as claimed in claim 19, wherein
the wind outlet of the wind channel is at a lateral surface of the case.

20 26. The bubble cycling heat exchanger as claimed in claim 19, wherein
the wind outlet of the wind channel is at two sides of the case.

27. The bubble cycling heat exchanger as claimed in claim 19, wherein
a bottom wind inlet is installed at a middle section of the wind
channel.

25 28. The bubble cycling heat exchanger as claimed in claim 19, wherein
in the wind channel, a radiator is formed by a plurality of stacked and

spaced fins.

29. The bubble cycling heat exchanger as claimed in claim 28, wherein
a loop is installed at a top of the wind channel.

30. The bubble cycling heat exchanger as claimed in claim 29, wherein
5 the loop of the wind channel is connected to at least one central
conductive piece.

31. The bubble cycling heat exchanger as claimed in claim 30, wherein
the conductive piece passes through each fin.

32. The bubble cycling heat exchanger as claimed in claim 19, wherein
10 the wind channel is bendable.

33. The bubble cycling heat exchanger as claimed in claim 1, wherein
the computer is a personal computer.

34. The bubble cycling heat exchanger as claimed in claim 33, wherein
a wind outlet is installed at a side of the personal computer.

35. The bubble cycling heat exchanger as claimed in claim 34, wherein
a blower is installed at the wind outlet of the wind channel.

36. The bubble cycling heat exchanger as claimed in claim 35, wherein
at least one fin passes through the loop.

37. The bubble cycling heat exchanger as claimed in claim 33, wherein
20 at least one fin passes through the loop.

38. The bubble cycling heat exchanger as claimed in claim 37, wherein
the fin passing through the loop is installed at the wind inlet in front
of a power supply.

39. The bubble cycling heat exchanger as claimed in claim 37, wherein
25 the fin passing through the loop is installed at the wind inlet at the

RECEIVED
JULY 10 1987
SEARCHED INDEXED
SERIALIZED FILED
15

rear side of a power supply.

40. The bubble cycling heat exchanger as claimed in claim 33, wherein the radiator of the loop is a case of a computer.
41. The bubble cycling heat exchanger as claimed in claim 40, wherein the loop is adhered to one lateral surface of the case.
42. The bubble cycling heat exchanger as claimed in claim 40, wherein the loop is subdivided into two secondary loops between which a heat conducting body is connected.
43. The bubble cycling heat exchanger as claimed in claim 42, wherein the heat conducting body is similar to a heat conducting block and is with path to be connected to the bubble generator and guide region.
44. The bubble cycling heat exchanger as claimed in claim 1, wherein the primary element of computer to be a the heat absorbing source is a power radiating element.
45. The bubble cycling heat exchanger as claimed in claim 44, wherein at least one fin passes through the loop.
46. The bubble cycling heat exchanger as claimed in claim 45, wherein a blower is added to the fin of the loop.